

REMARKS

Claims 4 – 8, 10 and 12 are pending. Claims 1 – 3, 9, 11 and 13 – 17 have been canceled. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Claims 1 – 17 were rejected under 35 USC 103(a) as being unpatentable over JP 9221013 ('013) in view of US Patent 5,944,393, Sano ("Sano"). The applicants respectfully request that this rejection be withdrawn for the following reasons.

As described in the application, the invention is directed to solving the problem "where braking force applied to the left and right front wheels is uniformly increased and braking force applied to the left and right rear wheels is uniformly reduced. Accordingly, although the brake noise is reduce, at the same time a deviation from the optimal distribution of the braking force between the front and the rear becomes excessively large... Therefore, a driver may feel an unpleasant sensation when executing a noise prevention control" (Specification 2, lines 14 – 20.)

According to the claims, e.g., independent claim 4, the invention is directed to a vehicle brake system. There is a noise detection unit which detects a generation state of a brake noise in the individual wheels. A control unit selects, in accordance with the generation state of the brake noise of the individual wheels detected by the noise detection unit, a pair of diagonal wheels which are diagonally located and which include a wheel where the brake noise is generated as generating diagonal wheels among the wheels of the vehicle. The control unit reduces the target braking force for each of the generating diagonal wheels by a predetermined amount. Further, the control unit increases the target braking force for each of the pair of diagonal wheels other than the generating diagonal wheels by the predetermined amount. (See claim 4.)

Accordingly, the braking force of the generating diagonal wheels is controlled so as to be reduced. Also, the braking force of the other diagonal pair of wheels is controlled so as to be increased.

Therefore, the brake noise can be reduced. Further, the total braking force for each of the following combinations of wheels can remain unchanged: (i) left front and rear wheels, (ii) right front and rear wheels, (iii) left and right front wheels, (iv) left and right rear wheels.

Without conceding that '013 discloses any feature of the present invention, '013 is directed to a hydraulic pressure control device for a vehicle brake. According to '013, "when it is judged that the brake sound is generated, the control device ... reduces hydraulic pressures in the front wheel cylinders 20 FL, 20 FR in response to the hydraulic pressure signal of the master cylinder hydraulic pressure sensor 48, increases the hydraulic pressures of the rear wheel cylinders 20RL, 20RR so as to keep a total braking force as it is." When the brake noise is detected, both braking forces applied to left and right front wheels are reduced while both braking forces applied to left and right rear wheels are increased. In both pairs of diagonal wheels, including the wheel where the brake noise is generated, the braking force of the front wheel is controlled to be reduced and the braking force of the rear wheel is controlled to be increased.

The office action admits that '013 "lacks a specific discussion of reducing or increasing pressures in the wheels upon noise detection in the front and rear wheels, but in a diagonal arrangement." Sano is cited to attempt to remedy the deficiencies of '013.

Sano concerns a turn control apparatus for a vehicle. According to Sano, "the outside front and inside rear wheels viewed in the vehicle turn direction are selected from the vehicle wheels as two target wheels to be controlled. The braking force on one target wheel to be

controlled is increased in accordance with the turning condition of the vehicle, while that of the other target wheel to be controlled is decreased.” (Abstract.) Accordingly, the total braking force of the pair of diagonal wheels can be unchanged, however, the distribution of braking force between front and rear wheels and left and right wheels, respectively, is changed.

The office action asserts that ‘013 in combination with Sano discloses the invention as claimed. To the contrary, ‘013 and/or Sano, alone or combined, fails to teach or suggest the invention, as presently claimed, when the claims are considered as a whole. The Examiner has recognized the deficiencies of ‘013.

Sano fails to teach or suggests, for example, that the control unit “selects ... a pair of diagonal wheels which are diagonally located and which include a wheel where the brake noise is generated”, “reduces the target braking force for each of the generating diagonal wheels” and “increases the target braking force” for the other pair of diagonal wheels. (See claim 4.) To the contrary, Sano, alone or in combination with ‘013, cannot control noise without changing the distribution of braking force between the front and rear wheels and left and right wheels, respectively.

The office action mischaracterizes Sano, and then misconstrues the applicants’ arguments to suit the mischaracterization of Sano. Specifically, the office action states that “Sano discusses increasing and/or decreasing the target pressures in the diagonally arranged front and rear wheels ...” To the contrary, Sano discloses that the total braking force in the diagonal pair of wheels does not change, by increasing the braking force on one of the wheels, and decreasing the braking force on the other wheel.

Sano discloses an apparatus in which a braking force of an inside rear wheel (viewed in the vehicle turn direction) is reduced and a braking force of an outside front wheel is increased

for providing turning yaw moment or restoration moment to the vehicle when the vehicle turns.

(See Col. 29 lines 14 – 37.)

According to Sano, “[t]he increase amount and decrease amount of the brake pressure for the front-left wheel FW_L and the rear-right wheel RW_R are computed on the basis of the same required yaw moment γ_d , so that the absolute values of the increase amount and decrease amount are the same. Therefore, even if the brake pressures for the front-left and rear-right wheels FW_L and RW_R are decreased and increased, respectively, the braking force on the entire wheels [sic] does not change, and the braking feeling of the vehicle is not deteriorated.” (Col. 35, lines 13 – 21 (emphasis added).)

Attached hereto is Appendix A, providing examples of the different in wheel controls of ‘013, Sano, and claim 4. The difference in increasing and reducing braking force is illustrated for ‘013, Sano, and claim 4.

Nothing in Sano or ‘013 would suggest a unit which “reduces the target braking force for each of the generating diagonal wheels” and “increases the target braking force for each of the pair of diagonal wheels other than the generating diagonal wheels.” Sano and ‘013 operate in a fundamentally different way than the claimed invention.

Moreover, the proposed combination fails to make obvious the invention as claimed. Examples have been provided above as to some of the deficiencies that remain in the proposed combination, if made. None of these features mentioned above by way of example is taught or suggested by Sano or ‘013; neither Sano nor ‘013, alone or in combination, remedy these deficiencies. In view of the above, the applicants submit that the combination of features recited in the claims is patentable over the prior art cited by the examiner when each respective claim is interpreted as a whole.

With respect to the rejected dependent claims, applicant respectfully submits that these claims are allowable not only by virtue of their dependency from independent claim 4, but also because of additional features they recite in combination.

The applicants respectfully submit that, as described above, the cited prior art does not show or suggest the combination of features recited in the claims. The applicants do not concede that the cited prior art shows any of the elements recited in the claims. However, the applicants have provided specific examples of elements in the claims that are clearly not present in the cited prior art.

The applicants strongly emphasize that one reviewing the prosecution history should not interpret any of the examples applicants have described herein in connection with distinguishing over the prior art as limiting to those specific features in isolation. Rather, for the sake of simplicity, the applicants have provided examples of why the claims described above are distinguishable over the cited prior art.

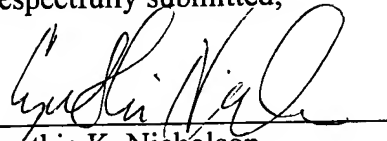
The applicants respectfully request entry of the present amendment because the amendment merely cancels claims.

In view of the foregoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

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Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,


Cynthia K. Nicholson
Reg. No. 36,880

Posz & Bethards, PLC
11250 Roger Bacon Drive, Suite 10
Reston, VA 20190
Phone 703-707-9110
Fax 703-707-9112
Customer No. 23400